Visual C# input from the console

The line that has been used to hold the console window open is also used to gather user input from the console. This code only returns a string.

```csharp
Console.ReadLine();
```

Care must be taken to ensure that the correct data is gathered. This requires using a `Console.WriteLine()` to prompt the user for what to enter and assigning the data gathered to a variable of an appropriate type.

This is the outline solution:

```csharp
String word;
Console.WriteLine("Please enter a word");
word = Console.ReadLine();
Console.WriteLine("The word entered is " + word);
Console.ReadLine();
```

A phrase or longer group of words can be captured as above. Hitting the ENTER key ends the string capture.

This technique will only capture strings, it is no good for numbers. The following code will fail.

```csharp
int number;
Console.WriteLine("Please enter a number");
number = Console.ReadLine();
//crash and burn
```

C# has a Convert class that will get us out of jail free. The following is a working solution:

```csharp
String word;
Console.WriteLine("Please enter a word");
word = Console.ReadLine();
int num = Convert.ToInt32(word);
```

There is a selection of relevant Convert methods but the naming convention does not fully match that of C#

- `Convert.ToSingle()` convert to float
- `Convert.ToDouble()` convert to double
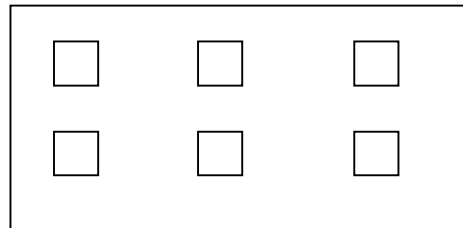- `Convert.ToBoolean()` convert to bool

Convert can accept a string but the result of the method needs to be assigned to the correct variable type.

```csharp
bool num = Convert.ToBoolean("1.22");
//this is will compile, run then crash
```

The user also needs to take care that the correct data type is entered from the console. In a more sophisticated program it is essential to check that the correct data type is entered before processing it further.

Even with basic input and output and no error checking C# can begin to solve some problems.

1. Create a program to accept 3 integers from the keyboard and output their average value.
2. Write a program that will accept the radius of a circle and calculate its circumference and area.
3. Below is the layout of a room with 6 columns of equal size. Calculate the floor area in meters not including the column base areas. The room dimensions and column widths will need to be entered.

4. Write a program to work out VAT on any item. The user is prompted for the price before tax. The program must display the original price, the VAT due and the final price.
5. A special excursion train is to be run to Blackpool. The costs and seating are as follows.

       CostFirst   the cost of a business class ticket
       CostSecond the cost of a standard class ticket
       NumberFirst the number of business class tickets sold
       NumberSec the number of standard tickets sold
       Cost   the cost to run the train

Write a program to allow these values to be entered from the keyboard and to display

       The money taken for business class passengers
       The money taken for standard passengers
       The total number of passengers
       The profit (or loss) made from the excursion.